

CLAIMS

We claim:

1. A method for analyzing a query and generating related results comprising:
determining a keyword associated with the query;
generating at least one term related to at least one keyword;
supplying the keywords and terms to a data mining routine; and
generating a least one related result to the query.
2. The method of claim 1, wherein the determining step comprises polling a database for terms related to at least one keyword.
3. The method of claim 1, wherein the query comprises a plurality of keywords and a plurality of generated terms.
4. The method of claim 3, further comprising:
selecting at least one generated term; and
supplying the keywords and the selected terms to the data mining routine.
5. A method comprising the steps of:
constructing a query comprising keywords and constraints;
generating related keyword and/or related constraints;
supplying the keywords, the constraints, the related keywords and/or the related constraints to a data mining routine; and
obtaining "as is" results and/or information, related results and/or information and a question related to the query adapted to enhance query results and/or information.
6. The method of claim 5, further comprising the steps of:

2 selecting the question; and
3 obtaining "as is" results and/or information, related results and/or information and a
4 sub-question related to the question adapted to enhance query results and/or information.

1 7. The method of claim 5, further comprising the steps of:
2 selecting the question;
3 obtaining "as is" results and/or information, related results and/or information and a
4 sub-question related to the question adapted to enhance query results and/or information;
5 selecting the sub-question;
6 obtaining "as is" results and/or information, related results and/or information and a
7 sub-question related to the question adapted to enhance query results and/or information to
8 form a query-by-question path.

1 8. The method of claim 7, further comprising the step of:
2 repeating the selecting sub-question step and obtaining step.

1 9. The method of claim 5, wherein the constraints are selected from the group consisting
2 of containment constraints, grouping constraints, connector constraints, data constraints and
3 mixtures and combinations thereof.

1 10. A method comprising:
2 constructing a query;
3 extracting keywords and constraints from the query;
4 generating related keywords and/or related constraints;
5 supplying the keywords, the constraints, the related keywords and/or the related
6 constraints to a data mining routine; and
7 obtaining "as is" results and/or information, related results and/or information and a
8 question related to the query adapted to enhance query results and/or information.

1 11. The method of claim 10, further comprising the steps of:
2 selecting the question; and
3 obtaining "as is" results and/or information, related results and/or information and a
4 sub-question related to the question adapted to enhance query results and/or information.

1 12. The method of claim 10, further comprising the steps of:
2 selecting the question;
3 obtaining "as is" results and/or information, related results and/or information and a
4 sub-question related to the question adapted to enhance query results and/or information;
5 selecting the sub-question;
6 obtaining "as is" results and/or information, related results and/or information and a
7 sub-question related to the question adapted to enhance query results and/or information to
8 form a query-by-question path.

1 13. The method of claim 12, further comprising the step of:
2 repeating the selecting sub-question step and obtaining step.

1 14. The method of claim 10, wherein the constraints are selected from the group
2 consisting of containment constraints, grouping constraints, connector constraints, data
3 constraints and mixtures and combinations thereof.

1 15. A system comprising:
2 a remote digital processing unit including an operating system, communication
3 routines, and a user interface having a query construction routine and a results display
4 routine;
5 an application server including an operating system, communication routines, and a
6 query information retrieval content enhancing sub-system having a controller, a library of

7 database interfaces, a library of data mining routines, a user profiler, a DB middleware
8 component and a query/results database, where the subsystem generates related results and/or
9 information and questions related to the query to enhance information retrieval from a query
10 constructed at the remote digital processing unit;

11 a database server including an operating system, communication routines, a database
12 and database services; and

13 a network interconnecting the remote digital processing unit, the application server
14 and the database server.

1 16. The system of claim 15, wherein the data mining library includes a chi squared DMR,
2 a correlation DMR, a decision tree DMR, a market basket type DMR, a naive Bayes DMR
3 based on Bayesain statistics, an association DMR, a cluster DMR, or mixtures or
4 combinations thereof.

1 17. The system of claim 15, wherein the database is selected from the group of
2 multidimensional databases, relational database, hierarchical databases and mixtures and
3 combinations thereof.

1 18. A query information retrieval content enhancing system comprising:
2 a controller,
3 a library of database interfaces,
4 a library of data mining routines,
5 a user profiler,
6 a middleware interface and
7 a query/results database,
8 where the system generates "as is" results and/or information, related results and/or
9 information and questions related to a query to enhance information retrieval from the query.

10 19. The system of claim 18, wherein the DMR is a chi squared DMR, a correlation DMR,
11 a decision tree DMR, a market basket type DMR, a naive Bayes DMR based on Bayesain
12 statistics, an association DMR, a cluster DMR and mixtures and combinations thereof.

1 20. The system of claim 18, wherein the middleware interface is selected from the group
2 of multidimensional database middleware interface, relational database middleware interface,
3 hierarchical database middleware interface and mixtures and combinations thereof.